**《程序设计课程实践》设计文档**

# 作业题目：房价预测

**学号：\_\_\_\_\_\_\_\_\_\_\_\_\_\_19151633\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**姓名：\_\_\_\_\_\_\_\_\_\_\_\_\_\_应宇杰\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

完成时间 2021 年 4 月 12 日

第\_\_4\_\_\_次作业 (写上第几次作业)

题目\_\_\_房价预测\_\_\_\_\_（写上题目号）

提交代码：

#include <cstdio>

#include <cctype>

using namespace std;

typedef long long ll;

struct Data{

int x,y;

}f[100010];

int n;

ll sumx,sumy,sumxy,sumxx;

double a,b;

inline char nc(FILE \*fp){

return getc(fp);

}

inline int read(FILE \*fp,int &a){

static char c=nc(fp);int f=1;

for (;!isdigit(c);c=nc(fp)){

if (c=='-') f=-1;

if (c==EOF) return -1;

}

for (a=0;isdigit(c);a=(a<<3)+(a<<1)+c-'0',c=nc(fp));

return a\*=f;

}

inline bool Inputs(void){

char s[110];

FILE \*fp;

printf("Please input your file name: ");

scanf("%s",&s);

if ((fp=fopen(s,"r"))==NULL) return 0;

while (read(fp,f[n+1].x)!=-1) read(fp,f[++n].y);

return fclose(fp),1;

}

inline void Init(void){

a=b=sumxy=sumx=sumy=sumxx=0;

return;

}

inline void LineReg(void){

for (int i=1; i<=n; ++i)

sumx+=f[i].x,sumy+=f[i].y,sumxy+=1ll\*f[i].x\*f[i].y,sumxx+=1ll\*f[i].x\*f[i].x;

b=(1.0\*sumxy/n-1.0\*sumx/n\*sumy/n)/(1.0\*sumxx/n-1.0\*sumx/n\*sumx/n);

a=1.0\*sumy/n-1.0\*b\*sumx/n;

return;

}

inline void Outputs(void){

int x;

double y;

printf("Please input your the measure of area: ");

scanf("%d",&x);

printf("The predicted house price is: %.6f",y=a+1.0\*b\*x);

return;

}

int main(void){

if (Inputs()==false){

puts("Fail to open file!");

return 0;

}

Init();

LineReg();

Outputs();

return 0;

}（可以截图）

//面积和房价

210,3999000

160,3299000

240,3690000

141,2320000

300,5399000

198,2999000

153,3149000

142,1989990

138,2120000

149,2425000

194,2399990

200,3470000

189,3299990

447,6999000

126,2599000

230,4499000

132,2999000

123,1999000

260,4999980

303,5990000

176,2529000

188,2550000

160,2429000

196,2599000

389,5739000

110,2499000

145,4645000

252,4690000

220,4750000

263,2999000

183,3499000

100,1699000

204,3149000

313,5799000

181,2859000

143,2499000

123,2299000

213,3450000

421,5490000

216,2870000

166,3685000

223,3299000

256,3140000

120,2990000

85,1799000

185,2999000

120,2395000

